CLAIMS

1. A method for processing a substrate, comprising:

generating a fluid meniscus to process the substrate;

applying the fluid meniscus to a surface of the substrate; and

managing a substrate processing environment so evaporation of fluids from a surface in the substrate processing environment is reduced.

2. A method for processing a substrate as recited in claim 1, wherein managing the substrate processing environment comprises inputting a gas into the substrate processing environment to reduce an evaporation rate of fluids within the substrate processing environment.

3. A method for processing a substrate as recited in claim 2, wherein the gas has a high relative humidity.

4. A method for processing a substrate as recited in claim 3, wherein the gas with the high relative humidity is generated by transmitting gas into a liquid bath and capturing vapor that bubbles up through the liquid bath.

5. A method for processing a substrate as recited in claim 3, wherein the gas with the high relative humidity has a relative humidity between about 50% and about 100%.

6. A method for processing a substrate as recited in claim 3, wherein the gas with the high relative humidity has a relative humidity between about 90% and about 100%.

7. A method for processing a substrate as recited in claim 3, wherein the gas with the high relative humidity has a relative humidity of about 100%.

8. A method for processing a substrate as recited in claim 2, wherein managing the substrate processing environment further comprises detecting fluid thickness on the fluid surface.

9. A method for processing a substrate as recited in claim 2, wherein the gas maintains a concentration of a particular liquid in water.

10. A method for processing a substrate as recited in claim 9, wherein the particular liquid is one of an alcohol, an acetone, and an azeotropic mixture.

11. A method for processing a substrate as recited in claim 9, wherein the particular liquid is isopropyl alcohol (IPA).

12. A method for processing a substrate as recited in claim 9, wherein the gas that maintains a concentration of the particular liquid in water is an N_2 carrier gas containing isopropyl alcohol (IPA) in vapor form.

13. An apparatus for processing a substrate, comprising:

a proximity head capable of generating a fluid meniscus to process a substrate surface; and

a chamber configured to house the proximity head, the chamber also configured to be supplied with an environmental control gas.

14 An apparatus for processing a substrate as recited in claim 13 further comprising,

a wafer processing environment generator configured to generate the environmental control gas.

15. An apparatus for processing a substrate as recited in claim 13, wherein the wafer processing environment generator is a bubbler.

16. An apparatus for processing a substrate as recited in claim 15, wherein the bubbler is configured to input a gas into a liquid bath and further configured to capture the gas that has traveled through the liquid bath.

17. An apparatus for processing a substrate as recited in claim 13, wherein the environmental control gas is a high relative humidity gas.

18. An apparatus for processing a substrate as recited in claim 13, wherein the environmental control gas maintains a concentration of a particular liquid in water.

19. An apparatus for processing a substrate as recited in claim 18, wherein the particular liquid is one of isopropyl alcohol, DIW and IPA, alcohol, DIW and alcohol, ketone, and ether.

20. An apparatus for processing a substrate, comprising:

a proximity head capable of generating a fluid meniscus to process a substrate surface; and

an opening located on the surface of the proximity head configured to apply an environmental control gas to a region on a leading edge side of the proximity head.

21. An apparatus for processing a substrate as recited in claim 20, wherein the environmental control gas reduces an evaporation rate of fluids from a surface of the proximity head.

22. An apparatus for processing a substrate as recited in claim 20, wherein the environmental control gas is a high relative humidity gas.

23. An apparatus for processing a substrate as recited in claim 20, wherein the gas with a high relative humidity has a relative humidity between about 50% and about 100%.

24. An apparatus for processing a substrate as recited in claim 22, wherein the gas with the high relative humidity has a relative humidity between about 90% and about 100%.

25. An apparatus for processing a substrate as recited in claim 22, wherein the gas with the high relative humidity has a relative humidity of about 100%.

26. An apparatus for processing a substrate as recited in claim 20, wherein the environmental control gas maintains a concentration of a particular liquid in water.

27. A method for processing a substrate, comprising:

generating a fluid meniscus to process the substrate;

applying the fluid meniscus to a surface of the substrate; and

reducing evaporation of fluids from a surface in the substrate processing environment.

28. A method for processing a substrate as recited in claim 27, wherein reducing evaporation of fluids includes managing a substrate processing environment by inputting a high relative humidity gas into the substrate processing environment.

29. A method for processing a substrate as recited in claim 28, wherein the gas with the high relative humidity is generated by transmitting gas into a liquid bath and capturing vapor that bubbles up through the liquid bath.

30. A method for processing a substrate as recited in claim 28, wherein the gas with the high relative humidity has a relative humidity between about 50% and about 100%.

31. A method for processing a substrate as recited in claim 28, wherein the gas with the high relative humidity has a relative humidity between about 90% and about 100%.

32. A method for processing a substrate as recited in claim 28, wherein the gas with the high relative humidity has a relative humidity of about 100%.